



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE

United States Patent and Trademark Office

Address: COMMISSIONER FOR PATENTS

P.O. Box 1450

Alexandria, Virginia 22313-1450

www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/586,423	04/18/2008	Sriskanthan Nadarajah	RAJAH4.001APC	4863
7590 01/29/2010				
Rajah and Tann 4 Battery Road #26-00 Bank of China Singapore, 049908 SINGAPORE			EXAMINER DANG, KHANH	
			ART UNIT 2111	PAPER NUMBER
			MAIL DATE 01/20/2010	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

# Office Action Summary

## Application No.

10/586,423

## Applicant(s)

NADARAJAH ET AL.

## Examiner

Khanh Dang

## Art Unit

2111

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-39 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-39 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/55/02)  
Paper No(s)/Mail Date 20060718
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_

**DETAILED ACTION**

***Claim Rejections - 35 USC § 112***

Claims 1-39 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1-34 are directed to an apparatus. However, the essential structural cooperative relationship(s) between the so-called "digital stream transmitter/receiver," "computer bus interface," and "data converter" have been omitted, such omission amounting to a gap between the necessary structural connections. See MPEP § 2172.01.

Claims 35-37 are directed to an apparatus. However, the essential structural cooperative relationship(s) between the so-called "digital stream transmitter," "computer bus interface," and "data converter" have been omitted, such omission amounting to a gap between the necessary structural connections. See MPEP § 2172.01.

Claim 38 is directed to an apparatus. However, the essential structural cooperative relationship(s) between the so-called "digital stream receiver," "computer bus interface," and "data converter" have been omitted, such omission amounting to a gap between the necessary structural connections. See MPEP § 2172.01.

Claim 39 is directed to an apparatus. However, the essential structural cooperative relationship(s) between the so-called "digital stream transmitter/receiver," "computer bus interface," and "data converter" have been omitted, such omission

amounting to a gap between the necessary structural connections. See MPEP § 2172.01.

MPEP 2172.01 requires that relationships between elements recited in the claims must be specified. Specifically, MPEP 2172.02 requires interrelation and structural relationships between essential elements in the claims. Therefore, it is the Examiner's position that the claimed elements, as defined in the originally filed specification and as identified above, are essential elements to the claimed invention. Since they are essential elements as defined in the originally filed specification, their structural cooperative relationships must be provided in the claims. Further, it is also the Examiner's position that the claimed elements, as identified above, function simultaneously, are directly functionally related, directly inter-cooperate, and/or serve independent purposes, as evidenced from the originally filed specification.

If Applicants disagree with the Examiner that the above identified elements, as defined by the originally filed specification, are essential elements to the claimed invention, and that the above identified elements are directly functionally related, directly inter-cooperate, and/or serve independent purposes, it is requested that Applicants provide evidences showing that the identified elements are not essential elements to the claimed invention, do not function simultaneously, are not directly functionally related, do not directly inter-cooperate, and/or do not serve independent purposes; and state on the record that this is the case.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-7, 9, 13, 14, 21, 28, 35, 38 and 39 are rejected under 35 U.S.C. 102(b) as being anticipated by Yiu (6008777).

With regard to claim 1, Yiu discloses an interface for interfacing a digital device (unit) for transmitting and/or receiving a digital stream to a computer (as shown generally in Fig. 1, which is reproduced below for ease of reference and convenience, Yiu discloses an interface for interfacing a digital device for transmitting/receiving a digital video and audio stream)

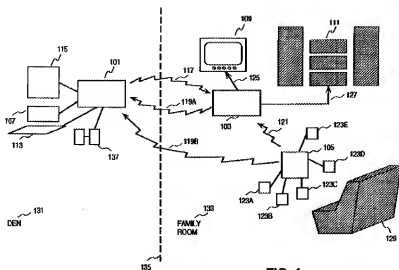


FIG. 1

, the interface comprising: a digital stream transmitter/receiver for transmitting digitally streamed content and/or receiving digitally streamed content to/from the digital device (the transceiver 459 is readable as the so-called "digital stream transmitter/receiver". See at least column 2, line 42 to column 3, line 7; column 6, lines 16-32); a computer bus interface for receiving/providing data to/from a computer bus of a computer for use by the computer and/or as provided by the computer (it is clear that PC107 uses a computer bus interface such as interface 101); and a data converter for converting data received by the digital stream receiver into data useable by the computer when provided to the computer bus and/or for converting data received by the computer bus interface into digitally streamed data for transmission by the digital stream transmitter (converter 455 is readable as "data converter." See at least column 6, line 33 to column 7, line 48).

With regard to claim 2, since the transceiver transmits and/or receives data to and/or from the digital stream device, it is clear that the digital stream

transmitter/receiver (transceiver) must be configured to meet electrical characteristics of the digital stream device.

With regard to claim 3, since the data converter is used to convert data to and/or from the digital device, it is clear that the data converter must be configured to meet data transmission protocol of the digital device.

With regard to claim 4, since the PC 107 uses the computer interface for data transmission, it is clear that the computer bus interface must be configured to meet electrical characteristics of the computer bus and to meet data transmission protocol of the computer bus.

With regard to claim 5, it is clear from discussion above regarding claim 1, the data converter is configured to convert data into a selected digital stream format, the selected format being signaled to the data converter in data provided by the computer via the computer bus. See at least column 6, line 33 to column 7, line 48.

With regard to claim 6, it is clear from discussion above regarding claim 1, the data converter is also configured to convert the digital stream from a selected format into data usable by the computer when provided to the computer bus, the selected format being signaled to data converter in the data provided by the computer via the computer bus. See at least column 6, line 33 to column 7, line 48.

With regard to claim 7, it is clear from discussion above that the data converter must be configured to recognize the format of the digital stream and signal to the computer in data provided to the computer bus the recognized format. See at least column 6, line 33 to column 7, line 48.

With regard to claim 9, it is clear that the data converter is a microcontroller, since data must be controlled and converted from one format to another.

With regard to claim 13, it is clear that the digital stream type is one of an ATSC compliant transport stream, DVB compliant transport stream, MPEG 2, MPEG 4, MPEG 7, digital satellite TV, TV tuner data, DVB/T, AC3, MP3, Dolby stereo, IEEE1394, IEE488 or digital radio format.

With regard to claim 14, it is clear from discussion above that the digital stream may include video or sound.

With regard to claim 21, it is clear from discussion above that the digital stream transmitter is configured to generate two or more independent media streams.

With regard to claim 28, it is clear that PC 107 must have an OS, and it is inherent that the computer program must interface with the operating system (OS) of the computer.

With regard to claims 35, 38, and 39, see discussion above.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.



The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yiu (6008777).

The difference between the claimed subject matter and that of Yiu is the use of a USB computer bus.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the system of Yiu with USB computer bus, since the Examiner takes Official Notice (see MPEP 2144.03) that the use of USB computer bus were old and well-known in the art at the time the invention was made. According to MPEP 2144.03, Applicants are entitled to traverse this Official Notice. However, also according to MPEP 2144.03, it is important to note that in order to adequately traverse an Official Notice, Applicants must specifically point out the supposed errors in the examiner's action, which would include stating why the noticed fact is not considered to be common knowledge or well-known in the art. See 37 CFR 1.111(b). See also *Chevenard*, 139 F.2d at 713, 60 USPQ at 241 ("[I]n the absence of any demand by appellant for the examiner to produce authority for his statement, we will not consider

this contention." ). A general allegation that the claims define a patentable invention without any reference to the examiner's assertion of official notice would be inadequate.

Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yiu (6008777).

The difference between the claimed subject matter and that of Yiu is the use of a general programmable interface for the data converter.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the system of Yiu with USB computer bus, since the Examiner takes Official Notice (see MPEP 2144.03) that the use of a general programmable interface were old and well-known in the art at the time the invention was made for providing programmable functions. According to MPEP 2144.03, Applicants are entitled to traverse this Official Notice. However, also according to MPEP 2144.03, it is important to note that in order to adequately traverse an Official Notice, Applicants must specifically point out the supposed errors in the examiner's action, which would include stating why the noticed fact is not considered to be common knowledge or well-known in the art. See 37 CFR 1.111(b). See also *Chevenard*, 139 F.2d at 713, 60 USPQ at 241 ("[I]n the absence of any demand by appellant for the examiner to produce authority for his statement, we will not consider this contention." ). A general allegation that the claims define a patentable invention without any reference to the examiner's assertion of official notice would be inadequate.

Claims 11 and 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yiu (6008777).

The difference between the claimed subject matter and that of Yiu is the use of a state machine for the data converter.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use a state machine for the data converter in Yiu, since the Examiner takes Official Notice (see MPEP 2144.03) that the use of a state machine such as a PLD, PLA or general programmable interface were old and well-known in the art at the time the invention was made for providing programmable functions. According to MPEP 2144.03, Applicants are entitled to traverse this Official Notice. However, also according to MPEP 2144.03, it is important to note that in order to adequately traverse an Official Notice, Applicants must specifically point out the supposed errors in the examiner's action, which would include stating why the noticed fact is not considered to be common knowledge or well-known in the art. See 37 CFR 1.111(b). See also *Chevenard*, 139 F.2d at 713, 60 USPQ at 241 ("[I]n the absence of any demand by appellant for the examiner to produce authority for his statement, we will not consider this contention."). A general allegation that the claims define a patentable invention without any reference to the examiner's assertion of official notice would be inadequate.

Claims 15-20, 23-27, 29-34, and 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yiu (6008777) in view of Cypress CY7C68013.

The difference between the claimed subject matter and that of Yiu is the use of a data converter that generates one or more control signals for control of the digital stream delivery to the digital device.

However, the use of such data converter is old and well-known as evidenced by Cypress CY7C68013 data converter (hereinafter Cypress).

The Cypress data converter generates one or more control signals for control of the digital stream delivery to the digital device. See Cypress CY7C68013, cited in PTO-892.

Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the Cypress as a data converter, for the purpose of generating one or more control signals for control of the digital stream delivery to the digital device.

With regard to claim 16, it is clear from the Cypress that the control signals are generated according to protocol requirements of the transport stream type the transceiver generates a digital clock signal and/or digital control signals. See Cypress CY7C68013, cited in PTO-892.

With regard to claim 17, the USB transceiver in Cypress operates in full speed and high speed modes, and the Cypress is connected to the computer (PC 107) via a USB Bus. Thus, it is clear that the transceiver transmission rate may be controlled by a signal provided by the computer via the computer bus.

With regard to claim 18, the Cypress supports data burst and uses buffers to store burst data. Thus, it is clear that the data is provided by the computer bus to the computer bus interface in bursts which are buffered by the transceiver and transmitted to the transmission medium in a digital stream at the transmission rate. See Cypress CY7C68013, cited in PTO-892.

With regard to claim 19, in Cypress, the USB transceiver buffers the digital stream sent by the digital device. See Cypress CY7C68013, cited in PTO-892.

With regard to claim 20, in Cypress, the interface includes a buffer for buffering the data passing therethrough. See Cypress CY7C68013, cited in PTO-892.

With regard to claims 23 and 24, it is clear that voltages used by the USB Cypress converter and that used by the digital device are different. Thus, voltage must be converted between the USB Cypress and the digital device.

With regard to claims 25-27, the Cypress is connected to the computer (PC 107) via a USB Bus. Thus, it is clear that the operation of USB Cypress data converter may be controlled by a computer program via the USB Bus and USB interface. With regard to claim 27, it is clear that the computer program includes a system driver for providing control of the operation of the data converter and/or transceiver and/or digital device.

With regard to claim 29, it is clear from Yiu in view of Cypress that the computer program may control the display of video or playing of sound coded in the digital stream received by the digital stream receiver.

With regard to claim 30, it is clear from the Cypress that the data converter includes a serial bus input/output Port that is configured to generate serial bus signals

for activation and/or control of the digital device (connected downstream of the Cypress). See Cypress CY7C68013, cited in PTO-892.

With regard to claim 31, it is clear that the serial bus signals are generated by software running on the microcontroller or hardware/firmware of the interface. See Cypress CY7C68013, cited in PTO-892.

With regard to claim 32, since the USB Cypress is connected to the PC (USB Host) via a USB Bus, it is clear that the USB Cypress is controlled by the PC. Thus, the serial bus signals are generated according instructions provided by the computer in data sent to the microcontroller and stored in the interface. See Cypress CY7C68013, cited in PTO-892.

With regard to claim 33, since the USB Cypress is connected to the PC (USB Host) via a USB Bus, it is clear that the USB Cypress is controlled by the PC. Thus, the serial bus signals are generated according instructions provided by the computer in data sent to the microcontroller and stored in the interface.

With regard to claim 34, it is clear from discussion above that the serial bus signals are generated to be compliant with a suitable standard.

With regard to claim 36, it is clear that the GPIF of Cypress provides I/O port.

Claims 22 and 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yiu (6008777) in view of Tahara et al. (Tahara, 5894328).

The difference between the claimed subject matter and that of Yiu is that use of a digital stream produced from a multiplexed data stream, the multiplexed data stream is provided to a respective buffer and de-multiplexed by a dual or multi phase clock signal.

Tahara discloses the use of multiplexing/demultiplexing method in which a plurality of data stream is multiplexed and transmit over a transmission network, and in which a multiplexed signals are demultiplexed and the original data streams are reproduced synchronously. See at least column 8, lines 40-67. Note for synchronizing reproduction of original signals, it is clear that multiphase clock signal must be used.

Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to employ multiplexing/demultiplexing in Yiu, as taught by Tahara, for the purpose streaming a plurality of digital signals.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Khanh Dang whose telephone number is 571-272-3626. The examiner can normally be reached on Monday-Friday from 9:AM to 5:PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Rinehart, can be reached on 571-272-3632. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Khanh Dang/

Primary Examiner, Art Unit 2111